

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-30 (canceled).

Claim 31 (new): An optometric apparatus which performs a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the optometric apparatus comprising:

astigmatic axis angle determination means for displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

hyperopia and myopia determination means for displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

refractive power determination means for displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the astigmatic axis angle determination means comprises: means for displaying an astigmatic axis determination chart which includes four test symbols each having multiple straight lines arranged in parallel at angles of about 45 degrees, about 90 degrees, about 135 degrees, and about 180 degrees, respectively; means for prompting the subject to select any test symbol viewed with greater contrast in the displayed astigmatic axis determination chart; and means for determining an astigmatic axis angle

in accordance with the test symbol selected in the astigmatic axis determination chart.

Claim 32 (new): An optometric apparatus which performs a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the optometric apparatus comprising:

astigmatic axis angle determination means for displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

hyperopia and myopia determination means for displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

refractive power determination means for displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the astigmatic axis angle determination means includes: means for displaying a first astigmatic axis determination chart which includes four test symbols each having multiple straight lines arranged in parallel in four orientations at angles of about 45 degrees, about 90 degrees, about 135 degrees, and about 180 degrees, respectively; means for prompting the subject to select any test symbol viewed with greater contrast in the displayed first astigmatic axis determination chart; means for displaying a second astigmatic axis determination chart which includes four test symbols each having multiple straight lines arranged in parallel in four orientations approximately intermediate to the four orientations; means for prompting the subject to select any test symbol viewed with greater contrast in the displayed second astigmatic axis determination chart; and means for determining an astigmatic axis angle in accordance with the test

symbol selected in the first astigmatic axis determination chart and the test symbol selected in the second astigmatic axis determination chart.

Claim 33 (new): An optometric apparatus which performs a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the optometric apparatus comprising:

astigmatic axis angle determination means for displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

hyperopia and myopia determination means for displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

refractive power determination means for displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the astigmatic axis angle determination means comprises: means for displaying a first astigmatic axis determination chart which includes four test symbols each having multiple straight lines arranged in parallel in four orientations at angles of about 45 degrees, about 90 degrees, about 135 degrees, and about 180 degrees, respectively; means for prompting the subject to select any test symbol viewed with greater contrast in the displayed first astigmatic axis determination chart; means for displaying a second astigmatic axis determination chart which includes four test symbols each having multiple straight lines arranged in parallel in four orientations approximately intermediate to the aforementioned four orientations; means for prompting the subject to select any test symbol viewed with greater contrast in the displayed second astigmatic axis

determination chart; means for displaying a third astigmatic axis determination chart which includes the test symbol selected by the subject in the first astigmatic axis determination chart and the test symbol selected by the subject in the second astigmatic axis determination chart; means for prompting the subject to select any test symbol viewed with greater contrast in the displayed third astigmatic axis determination chart; means for determining an astigmatic axis angle in accordance with the test symbol selected in the first astigmatic axis determination chart, the test symbol selected in the second astigmatic axis determination chart, and the test symbol selected in the third astigmatic axis determination chart.

Claim 34 (new): An optometric apparatus which performs a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the optometric apparatus comprising:

astigmatic axis angle determination means for displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

hyperopia and myopia determination means for displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

refractive power determination means for displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the hyperopia and myopia determination means comprises: means for displaying a first hyperopia and myopia determination chart having a red-based color background area and a blue-based color background area, in both of the areas black-based color

straight lines are drawn in one of the two selected orthogonal orientations; means for prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed first hyperopia and myopia determination chart; means for displaying a second hyperopia and myopia determination chart having a red-based color background area and a blue-based color background area, in both of the areas black-based color straight lines are drawn in the other of the two selected orthogonal orientations; means for prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed second hyperopia and myopia determination chart; means for determining hyperopia and myopia at the astigmatic axis angle determined and at an angle orthogonal thereto in accordance with a result selected in the first hyperopia and myopia determination chart and a result selected in the second hyperopia and myopia determination chart.

Claim 35 (new): An optometric apparatus which performs a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the optometric apparatus comprising:

astigmatic axis angle determination means for displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

hyperopia and myopia determination means for displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

refractive power determination means for displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the hyperopia and myopia determination means includes: means for displaying a first hyperopia and myopia determination chart having a red-based color background area and a blue-based color background area, in both of the areas black-based color straight lines are drawn in one of the two selected orthogonal orientations; means for prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed first hyperopia and myopia determination chart; means for displaying a second hyperopia and myopia determination chart having a red-based color background area and a blue-based color background area, in both of the areas black-based color straight lines are drawn in the other of the two selected orthogonal orientations; means for prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed second hyperopia and myopia determination chart; means for displaying a third hyperopia and myopia determination chart having a red-based color background area in which black-based color straight lines are drawn in the one of the two selected orthogonal orientations and a blue-based color background area in which black-based color straight lines are drawn in the other of the two selected orthogonal orientations; means for prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed third hyperopia and myopia determination chart; means for displaying a fourth hyperopia and myopia determination chart having a red-based color background area in which black-based color straight lines are drawn in the other of the two selected orthogonal orientations and a blue-based color background area in which black-based color straight lines are drawn in the one of the two selected orthogonal orientations; means for prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed fourth hyperopia and myopia determination chart; and means for determining hyperopia and myopia at the astigmatic axis angle determined and at an angle orthogonal thereto in accordance with a result selected in the first hyperopia and myopia determination chart, a result selected in the second hyperopia and myopia determination chart, a result selected in the third hyperopia and myopia determination chart, and a result selected in the fourth hyperopia and myopia determination chart.

Claim 36 (new): The optometric apparatus according to claim 34, wherein the hyperopia and myopia determination means includes the hyperopia and myopia determination chart in which the blue-based color area has a lower brightness than that of the red-based color area.

Claim 37 (new): The optometric apparatus according to claim 36, wherein the hyperopia and myopia determination means limits the time of displaying each of the hyperopia and myopia determination charts.

Claim 38 (new): The optometric apparatus according to claim 35, wherein the hyperopia and myopia determination means includes the hyperopia and myopia determination chart in which the blue-based color area has a lower brightness than that of the red-based color area.

Claim 39 (new): The optometric apparatus according to claim 38, wherein the hyperopia and myopia determination means limits the time of displaying each of the hyperopia and myopia determination charts.

Claim 40 (new): The optometric apparatus according to claim 31, wherein the refractive power determination means comprises: means for displaying a refractive power determination chart in which test symbols having a specific number of straight lines arranged in parallel in the two selected orthogonal orientations are varied in size in a stepwise manner; means for prompting the subject to select the smallest viewable test symbol in the displayed refractive power determination chart; and means for determining refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto in accordance with the test symbol selected in the refractive power determination chart.

Claim 41 (new): The optometric apparatus according to claim 31, wherein the refractive power determination means comprises: means for sequentially displaying a

plurality of refractive power determination charts which have a combination of test symbols having a specific number of straight lines drawn in parallel in the two selected orthogonal orientations in which the step difference in size is two or more; means for prompting the subject to select the smallest viewable test symbol in each of the displayed refractive power determination charts; and means for determining refractive powers at the astigmatic axis angle determined and at an angle orthogonal thereto in accordance with the test symbols selected in each of the refractive power determination charts.

Claim 42 (new): The optometric apparatus according to claim 40, wherein the refractive power determination chart has side zones, on both outside ends of a widthwise direction of the specific number of straight lines drawn, the side zones having a width 0.5 to 2.0 times the width of the straight lines and a specific contrast against the straight lines.

Claim 43 (new): The optometric apparatus according to claim 41, wherein the refractive power determination chart has side zones, on both outside ends of a widthwise direction of the specific number of straight lines drawn, the side zones having a width 0.5 to 2.0 times the width of the straight lines and a specific contrast against the straight lines.

Claim 44 (new): The optometric apparatus according to claim 42, wherein the side zones in the refractive power determination chart are different in color from areas between the straight lines and equal to or higher than the areas between the straight lines in brightness.

Claim 45 (new): The optometric apparatus according to claim 43, wherein the side zones in the refractive power determination chart are different in color from areas between the straight lines and equal to or higher than the areas between the straight lines in brightness.

Claim 46 (new): The optometric apparatus according to claim 42, wherein the refractive power determination chart has the straight lines in a black-based color, the areas between the straight lines in a green-based color, and the side zones in a yellow-based color.

Claim 47 (new): The optometric apparatus according to claim 43, wherein the refractive power determination chart has the straight lines in a black-based color, the areas between the straight lines in a green-based color, and the side zones in a yellow-based color.

Claim 48 (new): An optometric apparatus which performs a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the optometric apparatus comprising:

astigmatic axis angle determination means for displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

hyperopia and myopia determination means for displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

refractive power determination means for displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the refractive power determination means comprises: far refractive power determination means for prompting the subject to view test symbols at a far distance from display means and select the smallest viewable test symbol; near refractive power

determination means for prompting the subject to view test symbols at a close distance to the display means and select the smallest viewable test symbol; and means for determining the refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto in accordance with the test symbol selected in the far refractive power determination means and the test symbol selected in the near refractive power determination means.

Claim 49 (new): The optometric apparatus according to claim 48, wherein the near refractive power determination means is performed on a subject whose determination is suspended in the hyperopia and myopia determination means, and on a subject at a predetermined age or older, determined to have hyperopia by the hyperopia and myopia determination means.

Claim 50 (new): An optometric apparatus which performs a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the optometric apparatus comprising:

astigmatic axis angle determination means for displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

hyperopia and myopia determination means for displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

refractive power determination means for displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the refractive power determination means comprises: means for displaying a refractive power determination chart having test symbols varied in size in a stepwise manner, each of the test symbols having a line group area with red-based color straight lines and blue-based color straight lines of a uniform width drawn alternately in the two selected orthogonal orientations, and a reference color area of the same color as either one of the straight lines in the line group area; means for prompting the subject to select the smallest test symbol in the displayed refractive power determination chart in which any straight lines in the line group area provide an appearance of the same color as that of the reference color area; and means for determining the refractive powers at determined the astigmatic axis angle and at an angle orthogonal thereto in accordance with the test symbol selected in the refractive power determination chart.

Claim 51 (new): An optometric apparatus which performs a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the optometric apparatus comprising:

astigmatic axis angle determination means for displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

hyperopia and myopia determination means for displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

refractive power determination means for displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the refractive power determination means includes: means for sequentially

displaying a plurality of refractive power determination charts having a combination of test symbols having a line group area with red-based color straight lines and blue-based color straight lines of a uniform width drawn alternately in the two selected orthogonal orientations in which the step of difference in size is two or more, and a reference color area of the same color as either one of the straight lines in the line group area; means for prompting the subject to select the smallest test symbol in each of the displayed refractive power determination charts in which any straight lines in the line group area provide an appearance of the same color as that of the reference color area; and means for determining the refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto in accordance with the test symbol selected in each of the refractive power determination charts.

Claim 52 (new): The optometric apparatus according to claim 31, comprising: rough determination means including means for displaying a rough determination chart in which test symbols having no directivity are varied in size in a stepwise manner and means for prompting the subject to select the smallest viewable test symbol in the displayed rough determination chart to determine a subject's rough view; wherein the astigmatic axis angle determination means has means for adjusting the size of each test symbol in each of the astigmatic axis determination charts displayed in accordance with the rough view determined.

Claim 53 (new): The optometric apparatus according to claim 32, comprising: rough determination means including means for displaying a rough determination chart in which test symbols having no directivity are varied in size in a stepwise manner and means for prompting the subject to select the smallest viewable test symbol in the displayed rough determination chart; to determine a subject's rough view; wherein the astigmatic axis angle determination means has means for adjusting the size of each test symbol in each of the astigmatic axis determination charts displayed in accordance with the rough view determined.

Claim 54 (new): The optometric apparatus according to claim 33, comprising:
rough determination means including means for displaying a rough determination chart
in which test symbols having no directivity are varied in size in a stepwise manner and
means for prompting the subject to select the smallest viewable test symbol in the
displayed rough determination chart; to determine a subject's rough view; wherein
the astigmatic axis angle determination means has means for adjusting the size
of each test symbol in each of the astigmatic axis determination charts displayed in
accordance with the rough view determined.

Claim 55 (new): The optometric apparatus according to claim 34, comprising:
rough determination means including means for displaying a rough determination chart
in which test symbols having no directivity are varied in size in a stepwise manner and
means for prompting the subject to select the smallest viewable test symbol in the
displayed rough determination chart to determine a subject's rough view; wherein
the hyperopia and myopia determination means has means for adjusting the
width and intervals of the straight lines drawn in each of the hyperopia and myopia
determination charts displayed in accordance with the rough view determined.

Claim 56 (new): The optometric apparatus according to claim 35, comprising:
rough determination means including means for displaying a rough determination chart
in which test symbols having no directivity are varied in size in a stepwise manner and
means for prompting the subject to select the smallest viewable test symbol in the
displayed rough determination chart to determine a subject's rough view; wherein
the hyperopia and myopia determination means has means for adjusting the
width and intervals of the straight lines drawn in each of the hyperopia and myopia
determination charts displayed in accordance with the rough view determined.

Claim 57 (new): The optometric apparatus according to claim 40, comprising:
rough determination means including means for displaying a rough determination chart
in which test symbols having no directivity are varied in size in a stepwise manner and

means for prompting the subject to select the smallest viewable test symbol in the displayed rough determination chart to determine a subject's rough view, wherein the refractive power determination means has means for restricting the range of size of the test symbol in the refractive power determination chart displayed in accordance with the rough view determined.

Claim 58 (new): The optometric apparatus according to claim 41, comprising: rough determination means including means for displaying a rough determination chart in which test symbols having no directivity are varied in size in a stepwise manner and means for prompting the subject to select the smallest viewable test symbol in the displayed rough determination chart to determine a subject's rough view, wherein the refractive power determination means has means for restricting the range of size of the test symbol in the refractive power determination chart displayed in accordance with the rough view determined.

Claim 59 (new): The optometric apparatus according to claim 31, wherein in at least one of the astigmatic axis angle determination means, the hyperopia and myopia determination means, and the refractive power determination means, the subject is prompted to view a test symbol while being shielded so as not to let ambient light into the subject's eye.

Claim 60 (new): The optometric apparatus according to claim 31, comprising: optical eyeball model determination means for selecting a start eyeball model in accordance with the determined refractive power by the refractive power determination means and determining an optical eyeball model by verifying the model for validity at a given accommodation point of the subject; and lens power determination means for verifying the focusing capability provided when the subject wears eyeglasses or contact lenses using the optical eyeball model and determining the lens power.

Claim 61 (new): A lens power determination method for performing a subjective

eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the method comprising the steps of:

- displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

- displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

- displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine a refractive power at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

- the step of determining an astigmatic axis angle comprises the steps of:
 - displaying a first astigmatic axis determination chart which includes four test symbols each having multiple straight lines arranged in parallel in four orientations at angles of about 45 degrees, about 90 degrees, about 135 degrees, and about 180 degrees, respectively; prompting the subject to select any test symbol viewed with greater contrast in the displayed first astigmatic axis determination chart; displaying a second astigmatic axis determination chart which includes four test symbols each having multiple straight lines arranged in parallel in four orientations approximately intermediate to the aforementioned four orientations; prompting the subject to select any test symbol viewed with greater contrast in the displayed second astigmatic axis determination chart; displaying a third astigmatic axis determination chart which includes the test symbol selected by the subject in the first astigmatic axis determination chart and the test symbol selected by the subject in the second astigmatic axis determination chart; prompting the subject to select any test symbol viewed with greater contrast in the displayed third astigmatic axis determination chart; and determining an astigmatic axis angle in accordance with the test symbol selected in the first astigmatic axis determination chart, the test symbol selected in the second astigmatic axis

determination chart, and the test symbol selected in the third astigmatic axis determination chart.

Claim 62 (new): A lens power determination method for performing a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the method comprising the steps of:

displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine a refractive power at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the step of determining hyperopia and myopia comprises the steps of: displaying a first hyperopia and myopia determination chart having a red-based color background area and a blue-based color background area, in both of the areas black-based color straight lines are drawn in one of the two selected orthogonal orientations; prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed first hyperopia and myopia determination chart; displaying a second hyperopia and myopia determination chart having a red-based color background area and a blue-based color background area, in both of the areas black-based color straight lines are drawn in the other of the two selected orthogonal orientations; prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed second hyperopia and myopia determination chart; displaying a third hyperopia and myopia determination chart having a red-based color background area in which black-based color straight

lines are drawn in the one of the two selected orthogonal orientations and a blue-based color background area in which black-based color straight lines are drawn in the other of the two selected orthogonal orientations in; prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed third hyperopia and myopia determination chart; displaying a fourth hyperopia and myopia determination chart having a red-based color background area in which black-based color straight lines are drawn in the other of the two selected orthogonal orientations and a blue-based color background area in which black-based color straight lines are drawn in the one of the two selected orthogonal orientations; prompting the subject to select the area which provides a clearer appearance of the straight lines to the subject in the displayed fourth hyperopia and myopia determination chart; and determining hyperopia and myopia at the astigmatic axis angle determined and at an angle orthogonal thereto in accordance with a result selected in the first hyperopia and myopia determination chart, a result selected in the second hyperopia and myopia determination chart, a result selected in the third hyperopia and myopia determination chart, and a result selected in the fourth hyperopia and myopia determination chart.

Claim 63 (new): The lens power determination method according to claim 31, wherein the step of determining a refractive power comprises the steps of: sequentially displaying a plurality of refractive power determination charts which have a combination of test symbols having a certain number of straight lines drawn in parallel in the two selected orthogonal orientations in which the step difference in size is two or more; prompting the subject to select the smallest viewable test symbol in each of the displayed refractive power determination charts; and determining refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto in accordance with the test symbols selected in each of the refractive power determination charts.

Claim 64 (new): The lens power determination method according to claim 32, wherein the step of determining a refractive power comprises the steps of: sequentially displaying a plurality of refractive power determination charts which have a combination

of test symbols having a certain number of straight lines drawn in parallel in the two selected orthogonal orientations in which the step difference in size is two or more; prompting the subject to select the smallest viewable test symbol in each of the displayed refractive power determination charts; and determining refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto in accordance with the test symbols selected in each of the refractive power determination charts.

Claim 65 (new): A lens power determination method for performing a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the method comprising the steps of:

displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine a refractive power at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the step of determining a refractive power comprises: a far refractive power determination step of prompting the subject to view test symbols at a far distance from display means and select the smallest viewable test symbol; a near refractive power determination step of prompting the subject to view test symbols at a close distance to the display means and select the smallest viewable test symbol; and a step of determining the refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto in accordance with the test symbol selected through the far refractive power determination step and the test symbol selected through the near refractive power determination step.

Claim 66 (new): A lens power determination method for performing a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the method comprising the steps of:

displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine a refractive power at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the step of determining a refractive power comprises the steps of: displaying a refractive power determination chart having test symbols varied in size in a stepwise manner, each of the test symbols having a line group area with red-based color straight lines and blue-based color straight lines of a uniform width drawn alternately in the two selected orthogonal orientations, and a reference color area of the same color as either one of the straight lines in the line group area; prompting the subject to select the smallest test symbol in the displayed refractive power determination chart in which any straight lines in the line group area provide an appearance of the same color as that of the reference color area; and determining the refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto in accordance with the test symbol selected in the refractive power determination chart.

Claim 67 (new): A lens power determination method for performing a subjective eye examination by prompting a subject to view test symbols displayed on display means by one of the right and left eyes at a time and then obtaining a result of viewing by the subject, the method comprising the steps of:

displaying test symbols for determining an astigmatic axis angle and then obtaining a result of viewing by the subject to determine the astigmatic axis angle;

displaying test symbols for determining hyperopia or myopia in two orthogonal orientations selected in accordance with determined the astigmatic axis angle, and then obtaining a result of viewing by the subject to determine hyperopia or myopia at the determined astigmatic axis angle and at an angle orthogonal thereto; and

displaying test symbols for determining a refractive power in two orthogonal orientations selected in accordance with the determined astigmatic axis angle, and then obtaining a result of viewing by the subject to determine a refractive power at the determined astigmatic axis angle and at an angle orthogonal thereto; wherein

the step of determining a refractive power comprises the step of: sequentially displaying a plurality of refractive power determination charts having a combination of test symbols having a line group area with red-based color straight lines and blue-based color straight lines of a uniform width drawn alternately in the two selected orthogonal orientations in which the step difference in size is two or more, and a reference color area of the same color as either one of the straight lines in the line group area; prompting the subject to select the smallest test symbol in each of the displayed refractive power determination charts in which any straight lines in the line group area provide an appearance of the same color as that of the reference color area; and determining the refractive powers at the determined astigmatic axis angle and at an angle orthogonal thereto in accordance with the test symbol selected in each of the refractive power determination charts.

Claim 68 (new):. The optometric method according to claim 61, comprising the steps of: displaying a rough determination chart in which test symbols having no directivity are varied in size in a stepwise manner; prompting the subject to select the smallest viewable test symbol in the rough determination chart displayed; and determining a subject's rough view, wherein

the step of determining an astigmatic axis angle and/or the step of determining hyperopia and myopia and/or the step of determining a refractive power have a step of

International Application No.: PCT/JP03/10733
U.S. Patent Application No.: 10/531,958
February 28, 2006
Page 25 of 26

varying the condition of the test symbol displayed in accordance with the rough view determined.